

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:	)	<b>Mail Stop Appeal Brief – Patents</b>
	)	
Maureen HEYMANS et al.	)	Group Art Unit: 2145
	)	
Application No.: 10/665,359	)	Examiner: W. Goodchild
	)	
Filed: September 22, 2003	)	
	)	
For: DETERMINING GEOGRAPHICAL	)	
RELEVANCE OF WEB	)	
DOCUMENTS	)	

**APPEAL BRIEF**

U.S. Patent and Trademark Office  
Customer Window, Mail Stop Appeal Brief - Patents  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Sir:

This Appeal Brief is submitted in response to the final Office Action, dated April 17, 2008, and in support of the Notice of Appeal, filed Jul 17, 2008.

I. **REAL PARTY IN INTEREST**

The real party in interest in this appeal is Google Inc.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

Appellant is unaware of any related appeals, interferences or judicial proceedings.

III. STATUS OF CLAIMS

Claims 1-4, 6-14, and 16-47 are pending in this application. Claims 5 and 15 were cancelled without prejudice or disclaimer.

Claims 1-4, 6-14, and 16-47 were finally rejected in the final Office Action, dated April 17, 2008, and are the subject of the present appeal. These claims are reproduced in the Claim Appendix of this Appeal Brief.

IV. STATUS OF AMENDMENTS

Appellants filed an Amendment After Final on June 17, 2008 subsequent to the final Office Action, dated April 17, 2008. The Examiner sent an Advisory Action, dated July 1, 2008, indicating the Amendment After Final would be entered upon filing an appeal but allegedly did not place the application in condition for allowance.

A Notice of Appeal was filed on July 17, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In the paragraphs that follow, a concise explanation of the independent claims, each dependent claim argued separately, and the claims reciting means-plus-function or step-plus-function language that are involved in this Appeal will be provided by referring, in parenthesis, to examples of where support can be found in the specification and drawings.

Claim 1 is directed to a method that includes determining geographic locations associated with users that access a resource (e.g., p. 9, lines 8-17; Fig. 2, Acts 201 and 202); performing a cluster analysis of the geographic locations to locate a cluster of the geographic locations (e.g., p. 11, lines 4-5; Fig. 2, Act 203); and storing an indication that the resource is associated with a geographic area corresponding to the located cluster (e.g., p. 11, lines 21 to p. 12, line 8; p. 6, lines 15-21; Fig. 2 Act 204; Fig. 1, item 122).

Claim 6 is directed to a method of providing documents that includes collecting location information associated with first users that access a resource (e.g., p. 9, lines 8-17; Fig. 2, Acts 201 and 202); performing an analysis on the collected location information to determine a geographic relevance of the resource (e.g., p. 11, lines 4-5; Fig. 2, Act 203); determining second location information associated with a second user (e.g., p. 15, lines 3-4; p. 14, lines 3-6; Fig. 5, Act 501); and providing a document associated with the resource to the second user based, at least in part, on a matching of the geographic relevance of the resource to the second location information (e.g., p. 16, lines 1-5; Fig. 5, Act 504; p. 7, lines 19-22).

Claim 7 recites that collecting location information further comprises collecting location information from multiple first users (e.g., p. 9, lines 8-17; Fig. 2, Acts 201 and 202), and wherein performing an analysis further comprises performing a cluster analysis (e.g., p. 11, lines 4-5; Fig. 2, Act 203).

Claim 14 is directed to a method of associating a web site with a geographic location to which the web site relates (e.g., p. 8, lines 18-21; Fig. 2), the method including determining a plurality of locations associated with users that access the web site (e.g., p. 9, lines 8-17; Fig. 2, Acts 201 and 202); analyzing, via a cluster analysis, the determined locations to determine geographical relevance of the web site (e.g., p. 11, lines 4-5; Fig. 2, Act 203); and storing the

determined geographical relevance of the web site (e.g., p. 11, lines 21 to p. 12, line 8; p. 6, lines 15-21; Fig. 2 Act 204; Fig. 1, item 122).

Claim 23 recites that mapping the plurality of network addresses to location information includes mapping the network addresses to cities that are estimated to be closest to physical locations associated with the network addresses (e.g., p. 10, lines 14-15), and mapping the cities to a two-dimensional point defined by latitude and longitude values (e.g., p. 10, lines 15-16).

Claim 26 recites determining a probability that a location associated with a particular user is within the geographic location associated with the resource based on a statistical model applied to the one or more clusters (e.g., p. 16, lines 11-13; Fig. 6).

Claim 27 recites that performing the cluster analysis of the plurality of network addresses further includes normalizing the determined locations based on populations associated with locations of the determined locations (e.g., p. 12, lines 14-17).

Claim 29 recites that dynamic IP addresses are given less weight in the cluster analysis than static IP addresses (e.g., p. 13, lines 19-23).

Claim 30 is directed to a computer-implemented search engine that includes a processor (e.g., p. 5, lines 21-23; Fig. 1, item 111); and a memory coupled to the processor (e.g., p. 6, line 15; Fig. 1, item 112), the memory comprising a document selector component configured to locate a set of documents relevant to a search query (e.g., p. 6, lines 20-21; Fig. 1, item 121), the document selector component basing the determination of relevancy at least in part on geographic relevance information associated with documents in the set of documents (e.g., p. 7, lines 19-22); and a geographic relevance component (e.g., p. 6, line 21; Fig. 1, item 122) configured to generate the geographic relevance information associated with the documents in the set of documents by gathering a plurality of network addresses of users that access the

documents in the set of documents (e.g., p. 7, lines 14-19), mapping the plurality of network addresses to location data points (e.g., p. 10, lines 14-16), and performing a cluster analysis on the location data points to locate clusters of the located data points (e.g., p. 11, lines 4-5), the located clusters indicating areas of geographic relevance (e.g., p. 11, lines 7-11), where the computer-implemented search engine returns search results to a user based on the set of documents (e.g., p. 7, lines 19-22).

Claim 31 recites that the geographic relevance component performs the cluster analysis on the location data points based on a determination of whether the location data points form one or more clusters (e.g., p. 12, lines 4-8).

Claim 32 recites that the geographic relevance component additionally determines a probability that a location associated with a user that submitted the search query is geographically relevant to the documents in the set of documents based on a statistical model applied to the one or more clusters (e.g., p. 16, lines 11-13; Fig. 6).

Claim 35 is directed to a method for determining a probability that a geographic location of a user submitting a search query is geographically relevant to a network resource (e.g., p. 17, lines 1-3; Fig. 6), the method comprising determining a geographic location associated with the user (e.g., p. 15, lines 3-4; Fig. 5, Act 501); acquiring geographic relevance information for the network resource (e.g., p. 16, lines 7-10; Fig. 5, Act 502), the geographic relevance information including information that defines at least one cluster associated with the network resource (e.g., p. 16, lines 18-21; Fig. 6, items 601 and 602), the information defining the at least one cluster including at least a center point of the cluster and a measure of dispersion of the cluster (e.g., p. 11, lines 13-16; Figs. 7a and 7b); determining the probability that the geographic location of the user is geographically relevant to the network resource based on a statistical model applied to the

at least one cluster (e.g., p. 16, lines 11-21); and returning search results to the user based on the determined probability (e.g., p. 7, lines 19-22).

Claim 38 recites that acquiring the geographic relevance information for the network resource includes gathering a plurality of network addresses of users that access the network resource (e.g., p. 9, lines 8-17; Fig. 2, Acts 201 and 202); mapping the plurality of network addresses to location data points (e.g., p. 10, lines 10-16); and performing a cluster analysis on the location data points to generate the geographic relevance information (e.g., p. 11, lines 4-5; Fig. 2, Act 203).

Claim 42 recites that performing the cluster analysis further includes determining whether the location data points tend to form one or more clusters (e.g., p. 12, lines 4-8).

Claim 45 is directed to a computer-readable medium for associating a network resource with a geographic location to which the network resource relates (e.g., p. 6, line 15; Fig. 1, item 112), the computer-readable medium containing programming instructions that when executed by a processor cause the processor to gather a plurality of network addresses of users that access the network resource (e.g., p. 8, lines 22-23; Fig. 2, Act 201); map the plurality of network addresses to data points that correspond to geographic locations (e.g., p. 10, lines 7-10); perform a cluster analysis on the data points to locate one or more clusters of the data points (e.g., p. 11, lines 4-5; Fig. 2, Act 203); determine a geographic location for the network resource based on the cluster analysis (e.g., p. 11, lines 4-5; Fig. 2, Act 203); and store an indication that the network resource is associated with the determined geographic location (e.g., p. 11, lines 21 to p. 12, line 8; p. 6, lines 15-21; Fig. 2 Act 204; Fig. 1, item 122).

Claim 47 is directed to a computer-implemented device for associating a network resource with a geographic location to which the network resource relates (e.g., p. 6, line 15; Fig.

1, item 112), the computer-implemented device comprising a processor (e.g., p. 5, lines 21-23; Fig. 1, item 111); and a memory coupled to the processor (e.g., p. 6, line 15; Fig. 1, item 112), the memory comprising means for gathering a plurality of network addresses of users that access the network resource (e.g., p. 6, line 21; Fig. 1, item 122); means for mapping the plurality of network addresses to data points that correspond to geographic locations (e.g., p. 6, line 21; Fig. 1, item 122); means for performing a cluster analysis on the data points to locate one or more clusters of the data points (e.g., p. 6, line 21; Fig. 1, item 122); means for determining a geographic relevance of the network resource based on the located one or more clusters (e.g., p. 6, line 21; Fig. 1, item 122); and means for storing an indication of the geographic relevance of the network resource (e.g., p. 6, line 15; Fig. 1, item 112).

#### VI. GROUND'S OF REJECTION TO BE REVIEWED ON APPEAL

A. Pending claims 30-34 and 47 stand rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter.

B. Pending claims 6 and 8-10 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent Application Publication No. 2003/0061211 to Schultz et al. (hereinafter "SCHULTZ").

C. Pending claims 1-4, 7, 11, 13-14, 16, 18-21, 30-32, 35-36, 38-39, 42-45, and 47 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over SCHULTZ in view of PCT Application Publication No. WO 02/15479 to Scarfe et al. (hereinafter "SCARFE").

D. Pending claims 12, 17, 22-26, 28, 40-41, and 46 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over SHULTZ in view of SCARFE and further in view of U.S. Patent Application Publication No. 2003/0023489 to McGuire et al. (hereinafter "MCGUIRE").

E. Pending claims 27 and 29 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over SHULTZ in view of SCARFE and MCGUIRE, and further in view of U.S. Patent No. 6,665,715 to Houri (hereinafter "HOURI").

F. Pending claims 33-34 and 37 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over SHULTZ in view of SCARFE and further in view of HOURI.

## VII. ARGUMENTS

### A. **The rejection under 35 U.S.C. § 101 should be reversed.**

#### 1. Claims 30-34.

The Examiner alleged that claims 30-34 can be considered to be software and are therefore non-statutory (final Office Action, p. 2). Appellants respectfully disagree.

Claim 30 recites a processor. A processor is a physical device. One skilled in the art would not reasonably construe the recited processor as software. Moreover, the Examiner provides no explanation as to how the recited processor can be construed as software. Appellants submit that claim 30 is directed to statutory matter. Accordingly, Appellants respectfully request that the rejection of claim 30 under U.S.C. § 101 be reversed.

Claims 31-34 depend from claim 30. Therefore, claims 31-34 are directed to statutory matter for at least the reasons set forth above with respect to claim 30. Accordingly, Appellants respectfully request that the rejection of claims 31-34 under U.S.C. § 101 be reversed.

#### 2. Claim 47.

The Examiner alleged that claim 47 can be considered to be software and is therefore non-statutory (final Office Action, p. 2). Appellants respectfully disagree.



Claim 47 recites a processor. A processor is a physical device. One skilled in the art would not reasonably construe the recited processor as software. Moreover, the Examiner provides no explanation as to how the recited processor can be construed as software. Appellants submit that claim 47 is directed to statutory matter. Accordingly, Appellants respectfully request that the rejection of claim 47 under U.S.C. § 101 be reversed.

**B. The rejection under 35 U.S.C. § 102(e) based on U.S. Patent Application Publication No. 2003/0061211 to Schultz et al. (hereinafter “SCHULTZ”) should be reversed.**

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention always rests upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992). A proper rejection under 35 U.S.C. § 102 requires that a single reference teach every aspect of the claimed invention. Any feature not directly taught must be inherently present. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 2 U.S.P.Q.2d 1051 (Fed. Cir. 1987).

1. Claims 6 and 8-10.

Independent claim 6 is directed to a method of providing documents that includes collecting location information associated with first users that access a resource, performing an analysis on the collected location information to determine a geographic relevance of the resource, determining second location information associated with a second user, and providing a document associated with the resource to the second user based, at least in part, on a matching of the geographic relevance of the resource to the second location information. SCHULTZ does not disclose or suggest this combination of features.

For example, SCHULTZ does not disclose or suggest providing a document associated with a resource to a second user based, at least in part, on a matching of the geographic relevance of the resource to second location information (where the geographic relevance of the resource is determined based on an analysis of location information associated with first users), as recited in claim 6. The Examiner relies on paragraphs [0014] and [0017] of SCHULTZ for allegedly disclosing this feature (final Office Action, p. 3). Appellants disagree with the Examiner's interpretation of SCHULTZ.

Paragraph [0014] of SCHULTZ discloses:

In accordance with another aspect of the present invention, after searching, the method further includes sorting search results according to a specified criterion. In certain embodiments, the specified criterion may be user selected or specified by program parameters to include criterion such as: (i) proximity of geographically defined query; (ii) closest information result, e.g., matching searched name; and/or (iii) advertising information associated with query. Additionally, the outputted search results may be displayed to the user according to various display options corresponding to the sorting criterion.

This section of SCHULTZ discloses a method of sorting search results according to criteria that may be selected by a user or specified by program parameters, and may include the proximity of a geographically defined query, a closest information result, or advertising information associated with the query. The search results may be outputted to the user according to various display options.

It appears that the Examiner is relying on a geographically defined query entered by a user as allegedly corresponding to location information associated with first users. The Examiner also appears to rely on the search rank of a returned document in relation to the geographically defined search query as allegedly corresponding to the geographical relevance of a resource, as recited in claim 6. The Examiner also alleges that since SCHULTZ discloses location information for multiple users, SCHULTZ discloses determining second location information associated with a second user (final Office Action, p. 3). Therefore, the Examiner is

alleging that a second user entering a geographically defined search query corresponds to determining second location information associated with a second user.

However, SCHULTZ does not disclose or even remotely suggest providing a document to the second user based, at least in part, on a matching of the search rank of a returned document to a search query submitted by a first user, as would be required by claim 6, based on the Examiner's interpretation of SCHULTZ. In other words, any documents returned to a second user are not in any way based on any geographical relevance of such documents to a search query entered by a first user. Therefore, this section of SCHULTZ cannot disclose or suggest providing a document associated with a resource to a second user based, at least in part, on a matching of the geographic relevance of the resource to the second location information (where the geographic relevance of the resource is determined based on an analysis of location information associated with first users), as recited in claim 6.

Paragraph [0017] of SCHULTZ discloses:

In another aspect of the present invention, a method for associating a geocoding system coordinate with a search criteria utilizing a search engine associated with a geographic information system database and an information database, includes: receiving a query from an associated user, searching for at least one search result, identifying the at least one search result corresponding to a specified geographic area, and providing the at least one identified search result to the associated user.

This section of SCHULTZ discloses a method for associating a geocoding system with search criteria and includes receiving a search query from a user, searching for results, identifying a result as corresponding to a given geographical area and providing the result to the user. Even if it can be reasonably assumed that identifying a search result as corresponding to a geographic area specified by a first user is equivalent to performing an analysis on collected location information to determine the geographical relevance of a resource (a point Appellants do not concede), this section of SCHULTZ does not disclose or suggest providing a document to a

second user based on identifying a search result as corresponding to a geographical area specified by a first user, as would be required by claim 6 based on the Examiner's interpretation of SCHUTLZ. Therefore, this section of SCHULTZ does not disclose or suggest providing a document associated with a resource to a second user based, at least in part, on a matching of the geographic relevance of the resource to the second location information (where the geographic relevance of the resource is determined based on an analysis of location information associated with first users), as recited in claim 6.

For at least the foregoing reasons, claim 6 is not anticipated by SCHULTZ. Accordingly, Appellants respectfully request that the rejection of claim 6 under 35 U.S.C. § 102(e) based on SCHULTZ be reversed.

Claims 8-10 depend from claim 6. Therefore, these claims are not anticipated by SCHULTZ for at least the reasons set forth above with respect to claim 6. Accordingly, Appellants respectfully request that the rejection of claims 8-10 under 35 U.S.C. § 102(e) based on SCHULTZ be reversed.

**C. The rejection under 35 U.S.C. § 103(a) based on U.S. Patent Application Publication No. 2003/0061211 to Schultz et al. (hereinafter "SCHULTZ") in view of PCT Application Publication No. WO 02/15479 to Scarfe et al. (hereinafter "SCARFE") should be reversed.**

In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 U.S.P.Q. 173 (CCPA 1967). Based upon the objective evidence of record, the Examiner is required to make the factual inquiries mandated by Graham v. John Deere Co., 86 S.Ct. 684, 383 U.S. 1, 148 U.S.P.Q.

459 (1966). KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_\_ (April 30, 2007). The Examiner is also required to explain how and why one having ordinary skill in the art would have been realistically motivated to modify an applied reference and/or combine applied references to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

1. Claims 1-4.

Independent claim 1 is directed to a method that includes determining geographic locations associated with users that access a resource, performing a cluster analysis of the geographic locations to locate a cluster of the geographic locations, and storing an indication that the resource is associated with a geographic area corresponding to the located cluster. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SCHULTZ and SCARFE do not disclose or suggest performing a cluster analysis of geographic locations to locate a cluster of the geographic locations, as recited in claim 1. The Examiner admits that SCHULTZ does not disclose or suggest this feature (final Office Action, p. 4). The Examiner relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing this feature (final Office Action, p. 4). Appellants disagree with the Examiner's interpretation of SCARFE.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors which are used as the dimensions of the factor space are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of

packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests that geographical location can be a factor in the factor space. Furthermore, the factor space and measuring distances in the factor space cannot be reasonably interpreted as geographical distances, since the factor space is a mathematical construct bearing no relevance to geographical locations. Therefore, this section of SCARFE does not disclose or suggest performing a cluster analysis of geographic locations to locate a cluster of the geographic locations, as recited in claim 1.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE is not related to clusters of geographical locations and does not disclose or even remotely suggest performing a cluster analysis of geographic locations to locate a cluster of the geographic locations, as recited in claim 1.

Therefore, even if SCARFE were combined with SCHULTZ, the hypothetical combination would not disclose or suggest all of the features of claim 1. Furthermore, even if, for the sake of argument, it is assumed that a combination of SCARFE and SCHULTZ would disclose the features of claim 1 (a point Appellants do not concede), Appellants submit that the Examiner's reasons for combining SCHULTZ and SCARFE do not meet the requirements of 35 U.S.C. § 103.

For example, the Examiner alleges (final Office Action, p. 4):

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include clustering IP addresses based on location in order to tabulate where users accessing a particular web site are located.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_\_ (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, as stated above, SCARFE does not disclose or suggest clustering IP addresses based on location. SCARFE discloses clustering IP addresses based on factors, such as packet types and lengths, and the number of packets received in a given time period. The Examiner does not explain how such cluster analysis would be of benefit to a method of providing search results by a Geographical Information System (GIS) search engine of SCHULTZ. Furthermore, even if it is assumed that SCARFE does disclose cluster analysis based on location of IP addresses, it is not clear how such information would be used by the GIS engine of SCHULTZ, since SCHULTZ is not concerned with the a user's location based on an IP address, but merely what they submit as a search query or through other user submitted information.

For at least the foregoing reasons, Appellants submit that claim 1 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 1 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

Claims 2-4 depend from claim 1. Therefore, these claims are patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, for at least the reasons set

forth above with respect to claim 1. Accordingly, Appellants respectfully request that the rejection of claims 2-4 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

2. Claim 7.

Claim 7 depends from claim 6. Without acquiescing in the Examiner's rejection, Appellants submit that SCARFE does not overcome the deficiencies of SCHULTZ set forth above with respect to claim 6. Therefore, this claim is patentable over SCHULTZ and SCARFE for at least the reasons set forth above with respect to claim 6. Accordingly, Appellants respectfully request that the rejection of claim 7 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn. Moreover, claim 7 is patentable over SCHULTZ and SCARFE for reasons of its own.

For example, claim 7 recites that collecting location information further comprises collecting location information from multiple first users, and wherein performing an analysis (on the collected location information) further comprises performing a cluster analysis. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features. The Examiner relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing performing a cluster analysis (final Office Action, p. 5). Appellants submit that this sections (or any other section) of SCARFE does not disclose or suggest performing cluster analysis on collected location information, as recited in claim 7.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length



of packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests collecting location information. Furthermore, the factor space and measuring distances in the factor space cannot be reasonably interpreted as location information, since the factor space is a mathematical construct bearing no relevance to locations. Therefore, this section of SCARFE does not disclose or suggest performing cluster analysis on collected location information, as recited in claim 7.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE is not related to clusters of geographical locations and does not disclose or even remotely suggest performing cluster analysis on collected location information, as recited in claim 7.

For at least these additional reasons, Appellants submit that claim 7 is patentable over SCHULTZ and SCARF, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 7 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

3. Claims 11 and 13.

Claims 11 and 13 depend from claim 6. Without acquiescing in the Examiner's rejection, Appellants submit that SCARFE does not overcome the deficiencies of SCHULTZ set forth above with respect to claim 6. Therefore, these claims are patentable over SCHULTZ and SCARFE for at least the reasons set forth above with respect to claim 6. Accordingly, Appellants respectfully request that the rejection of claims 11 and 13 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

## 4. Claims 14, 16 and 18-21.

Independent claim 14 is directed to a method of associating a web site with a geographic location to which the web site relates, the method including determining a plurality of locations associated with users that access the web site; analyzing, via a cluster analysis, the determined locations to determine geographical relevance of the web site; and storing the determined geographical relevance of the web site. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SCHULTZ and SCARFE do not disclose or suggest analyzing, via a cluster analysis, locations, determined to be associated with users that access a web site, to determine geographical relevance of the web site, as recited in claim 14. The Examiner relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing cluster analysis (final Office Action, p. 6) and on paragraphs [0014] and [0017] of SCHULTZ for allegedly disclosing determining geographical relevance of a web site (final Office Action, p. 6). Appellants disagree with the Examiner's interpretation of SCARFE and SCHULTZ

At the outset, Appellants object to the Examiner's piecemeal examination of the above feature of claim 14. Claim 14 does not recite "cluster analysis" and "determining the geographical relevance of a web site". Claim 14 recites analyzing, via a cluster analysis, locations, determined to be associated with users that access a web site, to determine geographical relevance of the web site. Rather than addressing this specifically-recited feature of claim 14, the Examiner breaks the feature down into illogical parts by pointing to portions of SCARFE for allegedly disclosing cluster analysis and to unrelated portions of SCHULTZ for allegedly disclosing determining the geographical relevance of a web site. Such attempts at reconstructing Appellants' claims are clearly impermissible. Nevertheless, Appellants submit

that the sections of SCHULTZ and SCARFE relied upon by the Examiner do not disclose or suggest the above feature of claim 14.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests that the cluster analysis of packets can be used to determine the geographical relevance of a web site. Therefore, this section of SCARFE cannot disclose or suggest analyzing, via a cluster analysis, locations, determined to be associated with users that access a web site, to determine geographical relevance of the web site, as recited in claim 14.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE also does not disclose or suggest that the cluster analysis of packets can be used to determine the geographical relevance of a web site. Therefore, this section of SCARFE cannot disclose or suggest analyzing, via a cluster analysis, locations, determined to be associated with users that access a web site, to determine geographical relevance of the web site, as recited in claim 14.

Paragraph [0014] of SCHULTZ was reproduced above. This section of SCHULTZ discloses a method of sorting search results according to criteria that may be selected by a user or specified by program parameters, and may include the proximity of a geographically defined

query, a closest information result, or advertising information associated with the query. The search results may be outputted to the user according to various display options. Assuming the Examiner is interpreting sorting of search results based on the proximity of a geographically defined query as corresponding to determining the geographical relevance of a web site, this section of SCHULTZ does not disclose or suggest that the search results are analyzed via cluster analysis, as would be required by claim 14 based on such an interpretation of SCHULTZ. Therefore, this section of SCHULTZ does not disclose or suggest analyzing, via a cluster analysis, locations, determined to be associated with users that access a web site, to determine geographical relevance of the web site, as recited in claim 14.

Paragraph [0017] of SCHULTZ was reproduced above. This section of SCHULTZ discloses a method for associating a geocoding system with search criteria and includes receiving a search query from a user, searching for results, identifying a result as corresponding to a given geographical area and providing the result to the user. Even if it can be reasonably assumed that identifying a search result as corresponding to a geographic area specified by a first user is equivalent to determining the geographical relevance of a web site (a point Appellants do not concede), this section of SCHULTZ does not disclose or suggest that such identification is performed via cluster analysis, as would be required by claim 14 based on such an interpretation of SCHULTZ. Therefore, this section of SCHULTZ does not disclose or suggest analyzing, via a cluster analysis, locations, determined to be associated with users that access a web site, to determine geographical relevance of the web site, as recited in claim 14.

Therefore, even if SCARFE were combined with SCHULTZ, the hypothetical combination would not disclose or suggest all of the features of claim 14. Furthermore, even if, for the sake of argument, it is assumed that a combination of SCARFE and SCHULTZ would

disclose the features of claim 14 (a point Appellants do not concede), Appellants submit that the Examiner's reasons for combining SCHULTZ and SCARFE do not meet the requirements of 35 U.S.C. § 103.

For example, the Examiner alleges (final Office Action, p. 4):

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include clustering IP addresses based on location in order to tabulate where users accessing a particular web site are located.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_\_ (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, as stated above, SCARFE does not disclose or suggest clustering IP addresses based on location. SCARFE discloses clustering IP addresses based on factors, such as packet types and lengths, and the number of packets received in a given time period. It is not clear how such cluster analysis would be of benefit to a method of providing search results by a Geographical Information System (GIS) search engine of SCHULTZ. Furthermore, even if it is assumed that SCARFE does disclose cluster analysis based on location of IP addresses, it is not clear how such information would be used by the GIS engine of SCHULTZ, since SCHULTZ is not concerned with the user's location based on an IP address, but merely what they submit as a search query or through other user submitted information. The Examiner's conclusory statement falls short of providing an articulated reasoning to support the legal conclusion of obviousness.

For at least the foregoing reasons, Appellants submit that claim 14 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 14 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

Claims 16 and 18-21 depend from claim 14. Therefore, claims 16 and 18-21 are patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 14. Accordingly, Appellants respectfully request that the rejection of claims 16 and 18-21 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

5. Claim 30.

Independent claim 30 is directed to a computer-implemented search engine that includes a processor; and a memory coupled to the processor, the memory including a document selector component configured to locate a set of documents relevant to a search query, the document selector component basing the determination of relevancy at least in part on geographic relevance information associated with documents in the set of documents; and a geographic relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by gathering a plurality of network addresses of users that access the documents in the set of documents, mapping the plurality of network addresses to location data points, and performing a cluster analysis on the location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance, where the computer-implemented search engine returns search results to a user based on the set of documents. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SCHULTZ and SCARFE do not disclose or suggest a geographical relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by performing a cluster analysis on the location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance, as recited in claim 30. The Examiner relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing performing a cluster analysis on location data points (final Office Action, p. 7) and on paragraph [0014] and [0017] of SCHULTZ for allegedly disclosing that located clusters indicate areas of geographic relevance (final Office Action, p. 7). Appellants disagree with the Examiner's interpretation of SCARFE and SCHULTZ.

At the outset, Appellants object to the Examiner's piecemeal examination of the above feature of claim 30. Claim 30 does not recite "performing cluster analysis on location data points" and "located clusters indicating areas of geographic relevance". Claim 30 recites a geographical relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by performing a cluster analysis on the location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance. Rather than addressing this specifically-recited feature of claim 30, the Examiner breaks the feature down into illogical parts by pointing to portions of SCARFE for allegedly disclosing performing cluster analysis on location data points and to unrelated portions of SCHULTZ for allegedly disclosing that located clusters indicate areas of geographic relevance. Such attempts at reconstructing Appellants' claims are clearly impermissible. Nevertheless, Appellants submit that the sections of SCHULTZ and SCARFE relied upon by the Examiner do not disclose or suggest the above feature of claim 30.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests cluster analysis on location data points. Rather, this section of SCARFE discloses cluster analysis of points in factor space, which is an abstract mathematical construct. Therefore, this section of SCARFE cannot disclose or suggest a geographical relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by performing a cluster analysis on location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance, as recited in claim 30.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE also does not disclose or suggest cluster analysis on location data points. Therefore, this section of SCARFE cannot disclose or suggest a geographical relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by performing a cluster analysis on location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance, as recited in claim 30.

Paragraph [0014] of SCHULTZ was reproduced above. This section of SCHULTZ discloses a method of sorting search results according to criteria that may be selected by a user or



specified by program parameters, and may include the proximity of a geographically defined query, a closest information result, or advertising information associated with the query. The search results may be outputted to the user according to various display options. This section of SCHULTZ does not disclose or suggest performing cluster analysis to locate clusters of located data points. This section of SCHULTZ also does not disclose or suggest using located clusters to indicate areas of geographic relevance. Therefore, this section of SCHULTZ cannot disclose or suggest a geographical relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by performing a cluster analysis on the location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance, as recited in claim 30.

Paragraph [0017] of SCHULTZ was reproduced above. This section of SCHULTZ discloses a method for associating a geocoding system with search criteria and includes receiving a search query from a user, searching for results, identifying a result as corresponding to a given geographical area and providing the result to the user. This section of SCHULTZ does not disclose or suggest performing cluster analysis to locate clusters of located data points. This section of SCHULTZ also does not disclose or suggest using located clusters to indicate areas of geographic relevance. Therefore, this section of SCHULTZ cannot disclose or suggest a geographical relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by performing a cluster analysis on the location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance, as recited in claim 30.

Therefore, even if SCARFE were combined with SCHULTZ, the hypothetical combination would not disclose or suggest all of the features of claim 30. Furthermore, even if,

for the sake of argument, it is assumed that a combination of SCARFE and SCHULTZ would disclose the features of claim 30 (a point Appellants do not concede), Appellants submit that the Examiner's reasons for combining SCHULTZ and SCARFE do not meet the requirements of 35 U.S.C. § 103.

For example, the Examiner alleges (final Office Action, p. 4):

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include clustering IP addresses based on location in order to tabulate where users accessing a particular web site are located.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_\_ (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, as stated above, SCARFE does not disclose or suggest clustering IP addresses based on location. SCARFE discloses clustering IP addresses based on factors, such as packet types and lengths, and the number of packets received in a given time period. It is not clear how such cluster analysis would be of benefit to a method of providing search results by a Geographical Information System (GIS) search engine of SCHULTZ. Furthermore, even if it is assumed that SCARFE does disclose cluster analysis based on location of IP addresses, it is not clear how such information would be used by the GIS engine of SCHULTZ, since SCHULTZ is not concerned with the user's location based on an IP address, but merely what they submit as a search query or through other user submitted information. . The Examiner's conclusory

statement falls short of providing an articulated reasoning to support the legal conclusion of obviousness.

For at least the foregoing reasons, Appellants submit that claim 30 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 30 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

6. Claim 31.

Claim 31 depends from claim 30. Therefore, this claim is patentable over SCHULTZ and SCARFE for at least the reasons set forth above with respect to claim 30. Accordingly, Appellants respectfully request that the rejection of claim 31 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn. Moreover, claim 31 is patentable over SCHULTZ and SCARFE for reasons of its own.

For example, claim 31 recites that a geographic relevance component performs the cluster analysis on the location data points based on a determination of whether the location data points form one or more clusters. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this feature. The Examiner relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing performing a cluster analysis (final Office Action, p. 8). Appellants submit that these sections (or any other section) of SCARFE do not disclose or suggest performing cluster analysis on collected location information, as recited in claim 31.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance

between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests location data points. Rather, this section of SCARFE discloses data points in a factor space. Therefore, this section of SCARFE does not disclose or suggest that a geographic relevance component performs the cluster analysis on the location data points based on a determination of whether the location data points form one or more clusters, as recited in claim 31.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE does not disclose or suggest location data points. Rather, this section of SCARFE discloses data points in a factor space. Therefore, this section of SCARFE does not disclose or suggest that a geographic relevance component performs the cluster analysis on the location data points based on a determination of whether the location data points form one or more clusters, as recited in claim 31.

For at least these additional reasons, Appellants submit that claim 31 is patentable over SCHULTZ and SCARF, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 31 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

7. Claim 32.

Claim 32 depends from claim 30. Therefore, this claim is patentable over SCHULTZ and SCARFE for at least the reasons set forth above with respect to claim 30. Accordingly,

Appellants respectfully request that the rejection of claim 32 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn. Moreover, this claim is patentable over SCHULTZ and SCARFE for reasons of its own.

Claim 32 recites that a geographic relevance component additionally determines a probability that a location associated with a user that submitted a search query is geographically relevant to documents in the set of documents based on a statistical model applied to the one or more clusters. The Examiner relied on paragraph [0014] of SCHULTZ for allegedly disclosing “a location associated with a user that submitted a search query is geographically relevant to documents in the set of documents” and on p. 11, lines 8-18 of SCARFE for allegedly disclosing “a statistical model applied to the one or more clusters” (final Office Action, p. 8). Appellants disagree with the Examiner’s interpretation of SCHULTZ and SCARFE.

At the outset, Appellants object to the Examiner’s piecemeal examination of the above feature of claim 32. Claim 32 does not recite “a location associated with a user that submitted a search query is geographically relevant to documents in the set of documents” and “a statistical model applied to the one or more clusters”. Instead, claim 32 recites that a geographic relevance component additionally determines a probability that a location associated with a user that submitted a search query is geographically relevant to documents in the set of documents based on a statistical model applied to the one or more clusters. Rather than addressing this specifically-recited feature of claim 32, the Examiner breaks the feature down into illogical parts by pointing to portions of SCARFE for allegedly disclosing a location associated with a user that submitted a search query is geographically relevant to documents in the set of documents and to unrelated portions of SCHULTZ for allegedly disclosing a statistical model applied to the one or more clusters. Such attempts at reconstructing Appellants’ claims are clearly impermissible.

Nevertheless, Appellants submit that the sections of SCHULTZ and SCARFE relied upon by the Examiner do not disclose or suggest the above feature of claim 32.

Paragraph [0014] of SCHULTZ, which was reproduced above, discloses a method of sorting search results according to criteria that may be selected by a user or specified by program parameters, and may include the proximity of a geographically defined query, a closest information result, or advertising information associated with the query. The search results may be outputted to the user according to various display options. This section of SCHULTZ does not disclose or suggest applying a statistical model to one or more clusters. Therefore, this section of SCHULTZ cannot disclose or suggest that a geographic relevance component additionally determines a probability that a location associated with a user that submitted a search query is geographically relevant to documents in the set of documents based on a statistical model applied to the one or more clusters, as recited by claim 32.

Lines 8-18 on p. 11 of SCARFE disclose a classifying means and a comparing means, which together perform analysis on clusters of IP addresses and rare pairings of clusters. This section of SCARFE does not disclose or suggest determining the probability that a location associated with a user is geographically relevant to documents in a set of documents. This section of SCARFE discloses analyzing clusters of IP addresses based on factors which are not related to geographical location. This section of SCARFE does not disclose or suggest that a geographic relevance component additionally determines a probability that a location associated with a user that submitted a search query is geographically relevant to documents in the set of documents based on a statistical model applied to the one or more clusters, as recited by claim 32.

Moreover, the Examiner has not indicated how the method disclosed in paragraph [0014] of SCHULTZ could be combined with the method of lines 8-18 of p. 11 of SCARFE to suggest the features of claim 32. Even if SCARFE disclosed a statistical model, the incorporation of this statistical model into SCHULTZ would result in a method that determines clustering of IP addresses based on factors such as number of packets in a given time period or the types or sizes of packets received, and would not be related to sorting search results according to a geographical search query.

For at least these additional reasons, Appellants submit that claim 32 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 32 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

8. Claims 35, 36 and 39.

Independent claim 35 is directed to a method for determining a probability that a user submitting a search query is geographically relevant to a network resource. The method includes determining a geographic location associated with the user, acquiring geographic relevance information for the network resource, the geographic relevance information including information that defines at least one cluster associated with the network resource, the information defining the at least one cluster including at least a center point of the cluster and a measure of dispersion of the cluster, determining the probability that the user is geographically relevant to the network resource based on a statistical model applied to the at least one cluster, and returning search results to the user based on the determined probability. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SCHULTZ and SCARFE do not disclose or suggest acquiring geographic relevance information for a network resource, the geographic relevance information including information that defines at least one cluster associated with the network resource, the information defining the at least one cluster including at least a center point of the cluster and a measure of dispersion of the cluster, as recited in claim 35. The Examiner appears to admit that SCHULTZ does not disclose this feature and relies on p. 18, lines 5-14, pp. 16-17, and p. 11, lines 8-18 of SCARFE for allegedly disclosing this feature (final Office Action, p. 8). Appellants disagree with the Examiner's interpretation of SCARFE.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE does not disclose or suggest a center point for a cluster or a measure of dispersion for a cluster. Furthermore, this section of SCARFE is not related to geographical relevance. Therefore, this section of SCARFE does not disclose or suggest acquiring geographic relevance information for a network resource, the geographic relevance information including information that defines at least one cluster associated with the network resource, the information defining the at least one cluster including at least a center point of the cluster and a measure of dispersion of the cluster, as recited in claim 35.

Pages 16-17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of packets,



and the amount of packets sent within a given time period. Neither pp. 16-17, nor Table 1 of SCARFE discloses or suggests that geographical location can be a factor in the factor space. Furthermore, this section of SCARFE does not disclose or suggest a center point for a cluster or a measure of dispersion for a cluster. Therefore, this section of SCARFE does not disclose or suggest acquiring geographic relevance information for a network resource, the geographic relevance information including information that defines at least one cluster associated with the network resource, the information defining the at least one cluster including at least a center point of the cluster and a measure of dispersion of the cluster, as recited in claim 35.

Lines 8-18 of p. 11 of SCARFE disclose a classifying means and a comparing means, which together perform analysis on clusters of IP addresses and rare pairings of clusters. This section of SCARFE does not disclose or suggest a center point for a cluster or a measure of dispersion for a cluster. Furthermore, this section of SCARFE is not related to geographical relevance. Therefore, this section of SCARFE does not disclose or suggest acquiring geographic relevance information for a network resource, the geographic relevance information including information that defines at least one cluster associated with the network resource, the information defining the at least one cluster including at least a center point of the cluster and a measure of dispersion of the cluster, as recited in claim 35.

Therefore, even if SCARFE were combined with SCHULTZ, the hypothetical combination would not disclose or suggest all the features of claim 35. Furthermore, even if, for the sake of argument, it is assumed that a combination of SCARFE and SCHULTZ would disclose the features of claim 35, Appellants submit that the Examiner's reasons for combining SCHULTZ and SCARFE do not meet the requirements of 35 U.S.C. § 103.

For example, the Examiner alleges (final Office Action, p. 4):

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include clustering IP addresses based on location in order to tabulate where users accessing a particular web site are located.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_\_ (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, as stated above, SCARFE does not disclose or suggest clustering IP addresses based on location. SCARFE discloses clustering IP addresses based on factors, such as packet types and lengths, and the number of packets received in a given time period. It is not clear how such cluster analysis would be of benefit to a method of providing search results by a Geographical Information System (GIS) search engine of SCHULTZ. Furthermore, even if it is assumed that SCARFE does disclose cluster analysis based on location of IP addresses, it is not clear how such information would be used by the GIS engine of SCHULTZ, since SCHULTZ is not concerned with the user's location based on an IP address, but merely what they submit as a search query or through other user submitted information. The Examiner's conclusory statement falls short of providing an articulated reasoning to support the legal conclusion of obviousness.

For at least the foregoing reasons, Appellants submit that claim 35 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 35 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

Claims 36 and 39 depend from claim 35. Therefore, claims 36 and 39 are patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 35. Accordingly, Appellants respectfully request that the rejection of claims 36 and 39 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn.

9. Claims 38 and 44.

Claim 38 depends from claim 35. Therefore, claim 38 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 35. Accordingly, Appellants respectfully request that the rejection of claim 38 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn. Moreover, claim 38 is patentable over SCHULTZ and SCARFE for reasons of its own.

Claim 38 recites gathering a plurality of network addresses of users that access the network resource; mapping the plurality of network addresses to location data points; and performing a cluster analysis on the location data points to generate the geographic relevance information. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SCHULTZ and SCARFE do not disclose or suggest performing a cluster analysis on location data points to generate the geographic relevance information, as recited in claim 38. The Examiner appears to admit that SCHULTZ does not disclose this feature and relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing this feature (final Office Action, p. 9). Appellants disagree with the Examiner's interpretation of SCARFE.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests location data points. Rather, this section of SCARFE discloses data points in a factor space. Therefore, this section of SCARFE does not disclose or suggest performing a cluster analysis on the location data points to generate the geographic relevance information, as recited in claim 38.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE does not disclose or suggest location data points. Rather, this section of SCARFE discloses data points in a factor space. Therefore, this section of SCARFE does not disclose or suggest performing a cluster analysis on the location data points to generate the geographic relevance information, as recited in claim 38.

For at least these additional reasons, Appellants submit that claim 38 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 38 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn.

Claim 44 depends from claim 38. Therefore, this claim is patentable over SCHULTZ and SCARFE for at least the reasons set forth above with respect to claim 38. Accordingly,

Appellants respectfully request that the rejection of claim 44 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn.

10. Claims 42 and 43.

Claim 42 depends from claim 38. Therefore, this claim is patentable over SCHULTZ and SCARFE for at least the reasons set forth above with respect to claim 38. Accordingly, Appellants respectfully request that the rejection of claim 42 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn. Moreover, claim 42 is patentable over SCHULTZ and SCARFE for reasons of its own.

For example, claim 42 recites that performing cluster analysis includes determining whether location data points tend to form one or more clusters. The Examiner appears to admit that SCHULTZ does not disclose this feature and relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing performing a cluster analysis (final Office Action, p. 9). Appellants submit that these sections (or any other section) of SCARFE do not disclose or suggest performing cluster analysis includes determining whether location data points tend to form one or more clusters, as recited in claim 42.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests location data points. Rather, this section of SCARFE discloses data points in a factor space. Therefore, this section of SCARFE does not disclose or

suggest performing cluster analysis includes determining whether location data points tend to form one or more clusters, as recited in claim 42.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE does not disclose or suggest location data points. Rather, this section of SCARFE discloses data points in a factor space. Therefore, this section of SCARFE does not disclose or suggest performing cluster analysis includes determining whether location data points tend to form one or more clusters, as recited in claim 42.

For at least these additional reasons, Appellants submit that claim 42 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 42 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

Claim 43 depends from claim 42. Therefore, this claim is patentable over SCHULTZ and SCARFE for at least the reasons set forth above with respect to claim 42. Accordingly, Appellants respectfully request that the rejection of claim 43 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reconsidered and withdrawn.

11. Claim 45.

Independent claim 45 is directed to a computer-readable medium for associating a network resource with a geographic location to which the network resource relates, the computer-readable medium containing programming instructions that when executed by a processor cause the processor to gather a plurality of network addresses of users that access the network resource; map the plurality of network addresses to data points that correspond to

geographic locations; perform a cluster analysis on the data points to locate one or more clusters of the data points; determine a geographic location for the network resource based on the cluster analysis; and store an indication that the network resource is associated with the determined geographic location. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SCHULTZ and SCARFE do not disclose or suggest programming instructions that when executed by a processor cause the processor to perform a cluster analysis on data points that correspond to geographical locations to locate one or more clusters of the data points, as recited in claim 45. The Examiner admits that SCHULTZ does not disclose or suggest this feature (final Office Action, p. 10). The Examiner relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing this feature (final Office Action, p. 10). Appellants disagree with the Examiner's interpretation of SCARFE.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests that the data points in the factor space correspond to geographical locations. Therefore, this section of SCARFE does not disclose or suggest programming instructions that when executed by a processor cause the processor to perform a cluster analysis on data points that correspond to geographical locations to locate one or more clusters of the data points, as recited in claim 45.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster pairings fall within cluster pairing conditions. This section of SCARFE does not disclose or suggest that the data points in the factor space correspond to geographical locations. Therefore, this section of SCARFE does not disclose or suggest programming instructions that when executed by a processor cause the processor to perform a cluster analysis on data points that correspond to geographical locations to locate one or more clusters of the data points, as recited in claim 45.

Therefore, even if SCARFE were combined with SCHULTZ, the hypothetical combination would not disclose or suggest all of the features of claim 45. Furthermore, even if, for the sake of argument, it is assumed that a combination of SCARFE and SCHULTZ would disclose the features of claim 45 (a point Appellants do not concede), Appellants submit that the Examiner's reasons for combining SCHULTZ and SCARFE do not meet the requirements of 35 U.S.C. § 103.

For example, the Examiner alleges (final Office Action, p. 4):

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include clustering IP addresses based on location in order to tabulate where users accessing a particular web site are located.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_\_ (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds



cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, as stated above, SCARFE does not disclose or suggest clustering IP addresses based on location. SCARFE discloses clustering IP addresses based on factors, such as packet types and lengths, and the number of packets received in a given time period. It is not clear how such cluster analysis would be of benefit to a method of providing search results by a Geographical Information System (GIS) search engine of SCHULTZ. Furthermore, even if it is assumed that SCARFE does disclose cluster analysis based on location of IP addresses, it is not clear how such information would be used by the GIS engine of SCHULTZ, since SCHULTZ is not concerned with the user's location based on an IP address, but merely what they submit as a search query or through other user submitted information. The Examiner's conclusory statement falls short of providing an articulated reasoning to support the legal conclusion of obviousness.

For at least the foregoing reasons, Appellants submit that claim 45 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 45 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

12. Claim 47.

Independent claim 47 is directed to a computer-implemented device for associating a network resource with a geographic location to which the network resource relates, the computer-implemented device comprising processor; and memory coupled to the processor, the memory comprising means for gathering a plurality of network addresses of users that access the network resource; means for mapping the plurality of network addresses to data points that correspond to geographic locations; means for performing a cluster analysis on the data points to

locate one or more clusters of the data points; means for determining a geographic relevance of the network resource based on the located one or more clusters; and means for storing an indication of the geographic relevance of the network resource. SCHULTZ and SCARFE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SCHULTZ and SCARFE do not disclose or suggest means for performing a cluster analysis on data points that correspond to geographical locations to locate one or more clusters of the data points, as recited in claim 47. The Examiner admits that SCHULTZ does not disclose or suggest this feature (final Office Action, p. 11). The Examiner relies on p. 18, lines 5-14 and pp. 16-17 of SCARFE for allegedly disclosing this feature (final Office Action, p. 11). Appellants disagree with the Examiner's interpretation of SCARFE.

Pages 16 and 17 of SCARFE disclose a cluster analysis method to determine whether a given group of IP addresses fall within a cluster, by computing distances in a multi-dimensional space, such as an 8-dimensional factor space. The distance is the actual geometrical distance between objects in the factor space. The factors, which are used as the dimensions of the factor space, are given in Table 1 on p. 21 of SCARFE, and include factors based on types and length of packets, and the amount of packets sent within a given time period. Neither pp. 16-17 nor Table 1 of SCARFE discloses or suggests that the data points in the factor space correspond to geographical locations. Therefore, this section of SCARFE does not disclose or suggest means for performing a cluster analysis on data points that correspond to geographical locations to locate one or more clusters of the data points, as recited in claim 47.

Lines 5-14 of p. 18 of SCARFE disclose the detection of rare event criteria for data received by a firewall system. Such detection may include checking whether analyzed cluster

pairings fall within cluster pairing conditions. This section of SCARFE does not disclose or suggest that the data points in the factor space correspond to geographical locations. Therefore, this section of SCARFE does not disclose or suggest means for performing a cluster analysis on data points that correspond to geographical locations to locate one or more clusters of the data points, as recited in claim 47.

Therefore, even if SCARFE were combined with SCHULTZ, the hypothetical combination would not disclose or suggest all of the features of claim 47. Furthermore, even if, for the sake of argument, it is assumed that a combination of SCARFE and SCHULTZ would disclose the features of claim 47 (a point Appellants do not concede), Appellants submit that the Examiner's reasons for combining SCHULTZ and SCARFE do not meet the requirements of 35 U.S.C. § 103.

For example, the Examiner alleges (final Office Action, p. 4):

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include clustering IP addresses based on location in order to tabulate where users accessing a particular web site are located.

Appellants submit that the Examiner's allegation is merely a conclusory statement of an alleged benefit of the combination. Such conclusory statements have been repeatedly held to be insufficient for establishing a *prima facie* case of obviousness. In this respect, Appellants rely upon KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_\_ (April 30, 2007) (citing In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006)), where it was held that rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Furthermore, as stated above, SCARFE does not disclose or suggest clustering IP addresses based on location. SCARFE discloses clustering IP addresses based on factors, such

as packet types and lengths, and the number of packets received in a given time period. It is not clear how such cluster analysis would be of benefit to a method of providing search results by a Geographical Information System (GIS) search engine of SCHULTZ. Furthermore, even if it is assumed that SCARFE does disclose cluster analysis based on location of IP addresses, it is not clear how such information would be used by the GIS engine of SCHULTZ, since SCHULTZ is not concerned with the user's location based on an IP address, but merely what they submit as a search query or through other user submitted information. The Examiner's conclusory statement falls short of providing an articulated reasoning to support the legal conclusion of obviousness.

For at least the foregoing reasons, Appellants submit that claim 47 is patentable over SCHULTZ and SCARFE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 47 under 35 U.S.C. § 103(a) based on SCHULTZ and SCARFE be reversed.

**D. The rejection under 35 U.S.C. § 103(a) based on U.S. Patent Application Publication No. 2003/0061211 to Schultz et al. (hereinafter "SCHULTZ") in view of PCT Application Publication No. WO 02/15479 to Scarfe et al. (hereinafter "SCARFE") and further in view of U.S. Patent Application Publication No. 2003/0023489 to McGuire et al. (hereinafter "MCGUIRE") should be reversed.**

1. Claim 12.

Claim 12 depends from claim 11. Without acquiescing in the Examiner's rejection, Appellants submit that MCGUIRE does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 11. Therefore, claim 12 is patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination,

for at least the reasons set forth above with respect to claim 11. Accordingly, Appellants respectfully request that the rejection of claim 12 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reconsidered and withdrawn.

2. Claims 17, 22, 24-25, and 28.

Claims 17, 22, 24-25, and 28 depend from claim 14. Without acquiescing in the Examiner's rejection, Appellants submit that MCGUIRE does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 14. Therefore, claims 17, 22, 24-25, and 28 are patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 14. Accordingly, Appellants respectfully request that the rejection of claims 17, 22, 24-25, and 28 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reconsidered and withdrawn.

3. Claim 40.

Claim 40 depends from claim 35. Without acquiescing in the Examiner's rejection, Appellants submit that MCGUIRE does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 35. Therefore, claim 40 is patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 35. Accordingly, Appellants respectfully request that the rejection of claim 40 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reconsidered and withdrawn.

4. Claim 41.

Claim 41 depends from claim 38. Without acquiescing in the Examiner's rejection, Appellants submit that MCGUIRE does not overcome the deficiencies of SCHULTZ and

SCARFE set forth above with respect to claim 38. Therefore, claim 41 is patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 38. Accordingly, Appellants respectfully request that the rejection of claim 41 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reconsidered and withdrawn.

5. Claim 46.

Claim 46 depends from claim 45. Without acquiescing in the Examiner's rejection, Appellants submit that MCGUIRE does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 45. Therefore, claim 46 is patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 45. Accordingly, Appellants respectfully request that the rejection of claim 46 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reconsidered and withdrawn.

6. Claim 23.

Claim 23 depends from claim 14. Without acquiescing in the Examiner's rejection, Appellants submit that MCGUIRE does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 14. Therefore, claim 23 is patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 14. Accordingly, Appellants respectfully request that the rejection of claim 23 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reconsidered and withdrawn. Moreover, claim 23 is patentable over SCHULTZ, SCARFE, and MCGUIRE for reasons of its own.

Claim 23 recites mapping a network addresses to cities that are estimated to be closest to physical locations associated with the network addresses, and mapping the cities to a two-dimensional point defined by latitude and longitude values. SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of feature.

For example, SCHULTZ, SCARFE, and MCGUIRE do not disclose or suggest mapping a network addresses to cities that are estimated to be closest to physical locations associated with the network addresses, as recited in claim 23. The Examiner relies on paragraph [0018] of SCHULTZ for allegedly disclosing this feature (final Office Action, p. 12). Appellants disagree with the Examiner's interpretation of SCHULTZ.

Paragraph [0018] of SCHULTZ discloses:

In yet another aspect of the present invention, the method may also include: identifying multiple search results corresponding to the specified geographic area, and sorting the search results utilizing at least one sorting criterion selected from the group comprising: distance from a selected geographic location, time, price, and alphabetical order, and wherein the query is at least one entity criterion chosen from the group comprising name, brand name, product type, product category, service name, service category, business name, event, event forum, price, time, and/or combinations thereof. In certain embodiments of the invention, the specified geographic area is selected from the group comprising distance from a zip code, distance from an area code, distance from a telephone exchange area, distance from a state, distance from longitudinal and latitudinal coordinates, distance from state planar coordinates, a geometric corridor, distance from a unified geocoding system coordinate, and/or combinations thereof.

This section of SCHULTZ discloses sorting search results based on distance from a selected geographical region, time price, or alphabetical order. The specific geographical area is chosen from distance from a zip code, distance from an area code, distance from a telephone exchange area, distance from a state, distance from longitudinal and latitudinal coordinates, distance from planar coordinates, a geometric corridor, distance from a unified geocoding system coordinate, or combinations thereof. This section of SCHULTZ does not disclose or suggest distance from cities. Furthermore, sorting results based on the distance from a geographical area is not

equivalent to mapping network addresses to cities that are estimated to be closest to physical locations associated with the network addresses. Therefore, this section of SCHULTZ does not disclose or suggest mapping a network addresses to cities that are estimated to be closest to physical locations associated with the network addresses, as recited in claim 23.

SCARFE and MCGUIRE do not overcome the deficiencies of SCHULTZ set forth above with respect to claim 23.

For at least these additional reasons, claim 23 is patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 23 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reversed.

3. Claim 26.

Claim 26 depends from claim 25. Without acquiescing in the Examiner's rejection, Appellants submit that MCGUIRE does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 25. Therefore, claim 26 is patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 25. Accordingly, Appellants respectfully request that the rejection of claim 26 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reconsidered and withdrawn. Moreover, claim 26 is patentable over SCHULTZ, SCARFE, and MCGUIRE for reasons of its own.

Claim 26 recites determining a probability that a location associated with a particular user is within the geographic location associated with the resource based on a statistical model applied to the one or more clusters. SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features. The



Examiner relies on paragraph [0014] of SCHULTZ for allegedly disclosing “determining a probability that a location associated with a particular resource is within the geographical area” and on p. 11, lines 8-18 of SCARFE for allegedly disclosing “a statistical model applied to one or more clusters” (final Office Action, p. 13). Appellants disagree with the Examiner’s interpretation of SCHULTZ and SCARFE.

At the outset, Appellants object to the Examiner’s piecemeal examination of the above feature of claim 26. Claim 26 does not recite “determining a probability that a location associated with a particular resource is within the geographical area” and “a statistical model applied to one or more clusters”. Claim 26 recites determining a probability that a location associated with a particular user is within the geographic location associated with the resource based on a statistical model applied to the one or more clusters. Rather than addressing this specifically-recited feature of claim 26, the Examiner breaks the feature down into illogical parts by pointing to portions of SCARFE for allegedly disclosing a statistical model applied to one or more clusters and to unrelated portions of SCHULTZ for allegedly disclosing determining a probability that a location associated with a particular resource is within the geographical area. Such attempts at reconstructing Appellants’ claims are clearly impermissible.

Nevertheless, Appellants submit that the sections of SCHULTZ and SCARFE relied on by the Examiner do not disclose or suggest the above feature of claim 26.

Paragraph [0014] of SCHULTZ was reproduced above. This section of SCHULTZ discloses a method of sorting search results according to criteria that may be selected by a user or specified by program parameters, and may include the proximity of a geographically defined query, a closest information result, or advertising information associated with the query. The search results may be outputted to the user according to various display options. This section of

SCHULTZ does not disclose or suggest determining any probabilities. Furthermore, this section of SCHULTZ does not disclose or suggest a statistical model based on one or more clusters. Therefore, this section of SCHULTZ cannot disclose or suggest determining a probability that a location associated with a particular user is within the geographic location associated with the resource based on a statistical model applied to the one or more clusters, as recited in claim 26.

Page 11, lines 8-18 of SCARFE disclose receiving as input identified clusters and fresh data from a firewall log, and receiving rare pairings of IP address clusters. The processing means then performs real-time analysis of incoming packets. This section of SCARFE does not disclose or suggest a statistical model. This section of SCARFE also does not disclose or suggest determining any probabilities. Therefore, this section of SCARFE cannot disclose or suggest determining a probability that a location associated with a particular user is within the geographic location associated with the resource based on a statistical model applied to the one or more clusters, as recited in claim 26.

MCGUIRE does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 23.

For at least these additional reasons, claim 26 is patentable over SCHULTZ, SCARFE, and MCGUIRE, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 26 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and MCGUIRE be reversed.

**E. The rejection under 35 U.S.C. § 103(a) based on U.S. Patent Application Publication No. 2003/0061211 to Schultz et al. (hereinafter “SCHULTZ”) in view of PCT Application Publication No. WO 02/15479 to Scarfe et al. (hereinafter “SCARFE”) and U.S. Patent Application Publication No. 2003/0023489 to McGuire et al. (hereinafter “MCGUIRE”), and further in view of U.S. Patent No. 6,665,715 to Houri (hereinafter “HOURI”) should be reversed.**

1. Claim 27.

Claim 27 depends from claim 17. Without acquiescing in the Examiner's rejection, Appellants submit that HOURI does not overcome the deficiencies of SCHULTZ, SCARFE, and MCGUIRE set forth above with respect to claim 17. Therefore, claim 27 is patentable over SCHULTZ, SCARFE, MCGUIRE, and HOURI, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 17. Accordingly, Appellants respectfully request that the rejection of claim 27 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, MCGUIRE, and HOURI be reconsidered and withdrawn. Moreover, claim 27 is patentable over SCHULTZ, SCARFE, MCGUIRE, and HOURI for reasons of its own.

Claim 27 recites normalizing determined locations based on populations associated with locations of the determined locations. The Examiner admits that SCHULTZ, SCARFE, and MCGUIRE do not disclose this feature and relies on col. 7, line 59 to col. 8, line 4 of HOURI for allegedly disclosing this feature (final Office Action, p. 14). Appellants disagree with the Examiner's interpretation of HOURI.

Col. 7, line 59 to col. 8, line 4 of HOURI disclose:

For example, the system at step 58 determines the number of users or hosts from the same city who are connected to the same server uncovered at step 56. If the number of users or hosts from the same city satisfies the n% threshold, the system assigns that city name to the IP address of the host. If the number of

users or hosts from the same city does not satisfy the threshold, the system then determines the number of users or hosts from the same state. If the number of users from the same state satisfies the  $n\%$  threshold, the system assigns that state name to the IP address of a host. Similarly, if the number of users or hosts from the same country satisfy the threshold, the system assigns that country name to the IP address of the host.

This section of HOURI discloses determining the number of users or hosts from the same city and if the number satisfies a certain threshold, the system assigns that city to the IP address of the host. If the number does not meet the threshold, the system determines whether the number of users in the same state satisfy the threshold and assigns the state name to the IP address. If the number of users or hosts from the same country satisfy the threshold, the system assigns the country name to the IP address of the host. This section of HOURI does not disclose or suggest normalizing locations based on populations. The number of users from a city is not equivalent to the population of the city and might not even be related. Furthermore, assigning a name to an IP address based on the number of users from a city is not equivalent to normalizing based on the population of that city. Therefore, this section of HOURI cannot disclose or suggest normalizing determined locations based on populations associated with locations of the determined locations, as recited in claim 27.

For at least these additional reasons, claim 27 is patentable over SCHULTZ, SCARFE, MCGUIRE, and HOURI, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 27 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, MCGUIRE, and HOURI be reversed.

2. Claim 29.

Claim 29 depends from claim 28. Without acquiescing in the Examiner's rejection, Appellants submit that HOURI does not overcome the deficiencies of SCHULTZ, SCARFE, and MCGUIRE set forth above with respect to claim 28. Therefore, claim 29 is patentable over SCHULTZ, SCARFE, MCGUIRE, and HOURI, whether taken alone or in any reasonable

combination, for at least the reasons set forth above with respect to claim 28. Accordingly, Appellants respectfully request that the rejection of claim 29 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, MCGUIRE, and HOURI be reconsidered and withdrawn. Moreover, claim 29 is patentable over SCHULTZ, SCARFE, MCGUIRE, and HOURI for reasons of its own.

Claim 29 recites that dynamic IP addresses are given less weight in the cluster analysis than static IP addresses. The Examiner appears to admit that SCHULTZ, SCARFE, and MCGUIRE do not disclose this feature and relies on col. 2, lines 34-40 of HOURI for allegedly disclosing this feature (final Office Action, p. 14). Appellants disagree with the Examiner's interpretation of HOURI.

Col. 2, lines 34-40 of HOURI disclose:

However, in another embodiment of the invention, the association of an IP address with a geographic location is accomplished by employing a statistical analysis on the number of users connected to a particular host site and their corresponding geographical locations as obtained by the location tracking system. The location tracking system then stores that derived information in a IP address-geographic location database.

This section of HOURI discloses that the association of an IP address with a geographical location is accomplished through a statistical analysis on the number of users connected to a particular host site and their geographic locations as obtained by a location tracking system. This section of HOURI does not disclose or suggest that dynamic IP addresses are given less weight in the cluster analysis than static IP addresses, as recited in claim 29.

For at least these additional reasons, claim 29 is patentable over SCHULTZ, SCARFE, MCGUIRE, and HOURI, whether taken alone or in any reasonable combination. Accordingly, Appellants respectfully request that the rejection of claim 29 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, MCGUIRE, and HOURI be reversed.

**F. The rejection under 35 U.S.C. § 103(a) based on U.S. Patent Application Publication No. 2003/0061211 to Schultz et al. (hereinafter “SCHULTZ”) in view of PCT Application Publication No. WO 02/15479 to Scarfe et al. (hereinafter “SCARFE”), and further in view of U.S. Patent No. 6,665,715 to Houri (hereinafter “HOURI”) should be reversed.**

1. Claims 33-34.

Claims 33 and 34 depend from claim 30. Without acquiescing in the Examiner's rejection, Appellants submit that HOURI does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 30. Therefore, claims 33 and 34 are patentable over SCHULTZ, SCARFE, and HOURI, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 30. Accordingly, Appellants respectfully request that the rejection of claims 33 and 34 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and HOURI be reconsidered and withdrawn.

2. Claim 37.

Claim 37 depends from claim 35. Without acquiescing in the Examiner's rejection, Appellants submit that HOURI does not overcome the deficiencies of SCHULTZ and SCARFE set forth above with respect to claim 35. Therefore, claims 37 is patentable over SCHULTZ, SCARFE, and HOURI, whether taken alone or in any reasonable combination, for at least the reasons set forth above with respect to claim 35. Accordingly, Appellants respectfully request that the rejection of claim 37 under 35 U.S.C. § 103(a) based on SCHULTZ, SCARFE, and HOURI be reconsidered and withdrawn.

VIII. CONCLUSION

In view of the foregoing arguments, Appellants respectfully solicit the Honorable Board to reverse the Examiner's rejections of claims 1-4, 6-14, and 16-47.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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IX. CLAIM APPENDIX

1. A method comprising:  
determining geographic locations associated with users that access a resource;  
performing a cluster analysis of the geographic locations to locate a cluster of the  
geographic locations; and  
storing an indication that the resource is associated with a geographic area  
corresponding to the located cluster.
2. The method of claim 1, wherein the resource is a web advertisement.
3. The method of claim 1, wherein the resource is a web site.
4. The method of claim 1, wherein the geographic locations are derived from  
network addresses.
5. (Cancelled)
6. A method of providing documents comprising:  
collecting location information associated with first users that access a resource;  
performing an analysis on the collected location information to determine a  
geographic relevance of the resource;  
determining second location information associated with a second user; and



providing a document associated with the resource to the second user based, at least in part, on a matching of the geographic relevance of the resource to the second location information.

7. The method of claim 6, wherein the collecting location information further comprises collecting location information from multiple first users, and wherein performing an analysis further comprises performing a cluster analysis.
8. The method of claim 6, wherein the resource is a web document.
9. The method of claim 8, wherein the document associated with the resource is an advertisement.
10. The method of claim 6, wherein the document associated with the resource is the same as the resource.
11. The method of claim 6, wherein the location information includes network addresses of the first users.
12. The method of claim 11, further comprising:  
mapping the network addresses to two-dimensional coordinate information.

13. The method of claim 6, wherein collecting the location information associated with the first users includes collecting at least one of location information stored in cookies, location information derived from search terms entered by the user, or location information derived from browsing patterns.

14. A method of associating a web site with a geographic location to which the web site relates, the method comprising:

determining a plurality of locations associated with users that access the web site; analyzing, via a cluster analysis, the determined locations to determine geographical relevance of the web site; and

storing the determined geographical relevance of the web site.

15. (Cancelled)

16. The method of claim 14, wherein the plurality of locations are network addresses of the users.

17. The method of claim 16, further comprising:

mapping the plurality of network addresses to two-dimensional coordinate information, wherein analyzing the determined locations includes performing the cluster analysis based on the two-dimensional coordinate information.

18. The method of claim 14, wherein determining the plurality of locations associated with the users includes at least one of using location information stored in cookies, using account information of the users, using search terms entered by the user, or using browsing patterns of the users.

19. The method of claim 14, wherein determining the plurality of locations associated with the users includes collecting location information using an application running locally to the users.

20. The method of claim 19, wherein the applications include at least one of a browser tool bar, a browser plug-in, or a browser.

21. The method of claim 19, wherein the location information includes at least one of IP addresses of the users or network addresses of resources accessed by the users.

22. The method of claim 17, wherein mapping the plurality of network addresses to location information includes:

associating the network addresses with a two-dimensional point defined by latitude and longitude values estimated from the network addresses.

23. The method of claim 17, wherein mapping the plurality of network addresses to location information includes:

mapping the network addresses to cities that are estimated to be closest to physical locations associated with the network addresses, and  
mapping the cities to a two-dimensional point defined by latitude and longitude values.

24. The method of claim 17, wherein performing the cluster analysis further includes:  
determining whether the plurality of two-dimensional coordinates form one or more clusters.

25. The method of claim 24, wherein performing the cluster analysis further includes:  
associating geographic location information with the resource based on the one or more clusters.

26. The method of claim 25, further comprising:  
determining a probability that a location associated with a particular user is within the geographic location associated with the resource based on a statistical model applied to the one or more clusters.

27. The method of claim 17, wherein performing the cluster analysis of the plurality of network addresses further includes:  
normalizing the determined locations based on populations associated with locations of the determined locations.

28. The method of claim 17, wherein the plurality of network addresses are Internet Protocol (IP) addresses.

29. The method of claim 28, wherein dynamic IP addresses are given less weight in the cluster analysis than static IP addresses.

30. A computer-implemented search engine comprising:

a processor; and

a memory coupled to the processor, the memory comprising:

a document selector component configured to locate a set of documents relevant to a search query, the document selector component basing the determination of relevancy at least in part on geographic relevance information associated with documents in the set of documents; and

a geographic relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by gathering a plurality of network addresses of users that access the documents in the set of documents, mapping the plurality of network addresses to location data points, and performing a cluster analysis on the location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance,

where the computer-implemented search engine returns search results to a user based on the set of documents.

31. The computer-implemented search engine of claim 30, wherein the geographic relevance component performs the cluster analysis on the location data points based on a determination of whether the location data points form one or more clusters.
32. The computer-implemented search engine of claim 31, wherein the geographic relevance component additionally determines a probability that a location associated with a user that submitted the search query is geographically relevant to the documents in the set of documents based on a statistical model applied to the one or more clusters.
33. The computer-implemented search engine of claim 30, wherein, when performing the cluster analysis on the location data points, the geographic relevance component is further configured to normalize the location data points.
34. The computer-implemented search engine of claim 33, wherein the normalizing is based at least in part on population associated with the location data points.
35. A method for determining a probability that a geographic location of a user submitting a search query is geographically relevant to a network resource, the method comprising:
- determining a geographic location associated with the user;

acquiring geographic relevance information for the network resource, the geographic relevance information including information that defines at least one cluster associated with the network resource, the information defining the at least one cluster including at least a center point of the cluster and a measure of dispersion of the cluster; determining the probability that the geographic location of the user is geographically relevant to the network resource based on a statistical model applied to the at least one cluster; and returning search results to the user based on the determined probability.

36. The method of claim 35, wherein the determination of geographic location associated with the user is based on terms in the search query.

37. The method of claim 35, wherein the statistical model is based on a Gaussian model.

38. The method of claim 35, wherein acquiring the geographic relevance information for the network resource includes:

gathering a plurality of network addresses of users that access the network resource;

mapping the plurality of network addresses to location data points; and

performing a cluster analysis on the location data points to generate the geographic relevance information.

39. The method of claim 35, wherein the determination of geographic relevance of the user is based on web access patterns of the user.

40. The method of claim 38, wherein mapping the plurality of network addresses to the location data points includes:

associating the gathered network addresses with two-dimensional points defined by latitude and longitude values estimated from the network address.

41. The method of claim 38, wherein mapping the plurality of network addresses to the location data points further includes:

mapping the network addresses to cities that are estimated to be within a particular distance to physical locations associated with the network addresses; and  
mapping the cities to two-dimensional points defined by latitude and longitude values.

42. The method of claim 38, wherein performing the cluster analysis further includes:  
determining whether the location data points tend to form one or more clusters.

43. The method of claim 42, wherein performing the cluster analysis further includes:  
associating geographic location information with the network resource based on the one or more clusters.



44. The method of claim 38, wherein the plurality of network addresses are Internet Protocol (IP) addresses.

45. A computer-readable medium for associating a network resource with a geographic location to which the network resource relates, the computer-readable medium containing programming instructions that when executed by a processor cause the processor to:

- gather a plurality of network addresses of users that access the network resource;
- map the plurality of network addresses to data points that correspond to geographic locations;
- perform a cluster analysis on the data points to locate one or more clusters of the data points;
- determine a geographic location for the network resource based on the cluster analysis; and
- store an indication that the network resource is associated with the determined geographic location.

46. The computer-readable medium of claim 45, wherein the data points are each defined by latitude and longitude values.

47. A computer-implemented device for associating a network resource with a geographic location to which the network resource relates, the computer-implemented device comprising:

a processor; and

a memory coupled to the processor, the memory comprising:

means for gathering a plurality of network addresses of users that access the network resource;

means for mapping the plurality of network addresses to data points that correspond to geographic locations;

means for performing a cluster analysis on the data points to locate one or more clusters of the data points;

means for determining a geographic relevance of the network resource based on the located one or more clusters; and

means for storing an indication of the geographic relevance of the network resource.

X. EVIDENCE APPENDIX

None.

XI. RELATED PROCEEDINGS APPENDIX

None.